

AMENDMENTS TO THE CLAIMS

1-16. (Cancelled)

17. (New) An organic monolayer membrane which comprises:

amphiphilic compounds each having a photoisomerization group as a chromophore and a nucleic acid base (A), and

one or more oligonucleotides comprising a plurality of nucleic acid bases (B) capable of forming a base pair with the nucleic acid bases (A) wherein there is interposed between each of the nucleic acid bases (B) at least one nucleic acid base that is not capable of forming a base pair with the nucleic acid base (A),

wherein the nucleic acid bases (A) of the amphiphilic compounds form base pairs with the nucleic acid bases (B) of the one or more oligonucleotides, and wherein the amphiphilic compounds align to form the organic monolayer membrane.

18. (New) The organic monolayer membrane according to claim 17, wherein the photoisomerization group is an azobenzene group.

19. (New) An organic monolayer membrane product that comprises a condensed membrane, obtained by compressing the organic monolayer membrane according to claim 17, which is laminated on a solid substrate.

20. (New) A process for producing the organic monolayer membrane according to claim 17 which comprises:

spreading the amphiphilic compounds each having a photoisomerization group as a chromophore and a nucleic acid base (A) on an aqueous solution containing the one or more oligonucleotides comprising a plurality of nucleic acid bases (B) capable of forming a base pair

with the nucleic acid bases (A) wherein there is interposed between each of the nucleic acid bases (B) at least one nucleic acid base that is not capable of forming a base pair with the nucleic acid base (A), to form base pairs between the nucleic acid bases (A) of the amphiphilic compounds and the nucleic acid bases (B) of the one or more oligonucleotides, and wherein the amphiphilic compounds align to form the organic monolayer membrane.

21. (New) The process for producing the organic monolayer membrane according to claim 20, which further comprises compressing the organic monolayer membrane to form a condensed membrane, and laminating the condensed membrane on a solid substrate, to obtain an organic monolayer membrane product.

22. (New) An organic monolayer membrane product which comprises a condensed membrane, obtained by compressing the organic monolayer membrane according to claim 18, which is laminated on a solid substrate.

23. (New) A process for producing the organic monolayer membrane according to claim 18, which comprises:

spreading the amphiphilic compounds each having an azobenzene group and a nucleic acid base (A) on an aqueous solution containing the one or more oligonucleotides comprising a plurality of nucleic acid bases (B) capable of forming a base pair with the nucleic acid bases (A) wherein there is interposed between each of the nucleic acid bases (B) at least one nucleic acid base that is not capable of forming a base pair with the nucleic acid base (A), to form base pairs between the nucleic acid bases (A) of the amphiphilic compounds and the nucleic acid bases (B) of the one or more oligonucleotides, and wherein the amphiphilic compounds align to form the organic monolayer membrane.

24. (New) The process for producing the organic monolayer membrane according to claim 23, which further comprises compressing the organic monolayer membrane to form a condensed membrane, and laminating the condensed membrane on a solid substrate, to obtain an organic monolayer membrane product.